

INNOVATION & TECHNOLOGY

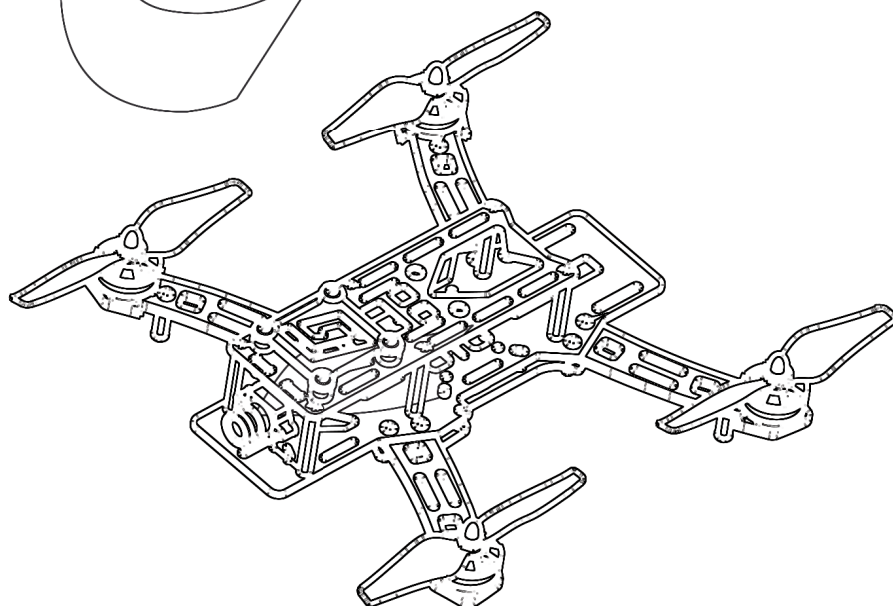
Graupner

Manual

Race Copter Alpha 250 Q

No. 16520.HOTT

English



CE

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Introduction

Thank you very much,
for choosing a **Graupner RACE COPTER ALPHA 250Q**. This Race Copter is extremely versatile.

Read this manual carefully to achieve the best results with your Race Copter and first of all to control safely your model. If you experience any trouble during operation, take the instructions to help or ask your dealer or Graupner Service Centre.

Due to technical changes, the information may be changed in this manual without prior notice. Be always updated by checking periodically for news on our website, www.graupner.de

This product complies with national and European legal requirements.

To maintain this condition and to ensure safe operation, you must read and follow this user manual and the safety notes before using the product!



NOTE


This manual is part of that product. It contains important information concerning operation and handling. Keep these instructions for future reference! Take this into consideration when you pass it on to other future owner.

Service centre

Graupner/SJ-Zentralservice

Graupner/SJ GmbH
Henriettenstrasse 96
D-73230 Kirchheim / Teck

Servicehotline

 (+49) (0)7021/722-130
Mon - Thu
7:30 am - 9:00 am
9:15 am - 4:00 pm
Fri
9:00 am - 1:00 pm

Graupner in Internet

For the service centres outside Germany please refer to our web site **www.graupner.de**

Intended use

The Race Copter is an almost ready to fly, remote-controlled Quadcopter. More punctual information about Race Copter can be found in the Technical data section.

The Race Copter is designed exclusively to be used as a battery-powered, radio controlled model, any other use is not allowed. For any improper use no warranty or liability is accepted.

Read through this entire manual before you attempt to program or use the RACE COPTER.

Graupner / SJ constantly works on the development of all products; we reserve the right to change the item, its technology and equipment.

Target group

The product is not a toy. It is not suitable for children under 14 years. The installation and operation of the controller must be performed by experienced modellers. If you do not have sufficient knowledge about dealing with radio-controlled models, please contact an experienced modeller or a model club.

Features

- ▶ Receiver with specific Quadcopter firmware
- ▶ Stabilization of the Copter on all 3 axes
- ▶ Natural flight performance
- ▶ Very good stabilization for aerobatic figures
- ▶ Easy adjusting of the gyro settings
- ▶ Parameters setting by the HoTT Telemetry
- ▶ Altitude sensor for vario and altitude

Package content

- ▶ **RACE COPTER ALPHA 250Q** with motors, speed controllers
- ▶ 2x 1347.5x3 / 2x 1348.5x3 propellers
- ▶ 2x LED PCB (mounted)
- ▶ 33579 HoTT gyro receiver
- ▶ 33630 Voltage module with manual
- ▶ Voltage module adapter for Fatshark transmitter
- ▶ Manual Race Copter Alpha 250Q

You can find the detailed manual for the speed controllers and receiver on their respective pages on the web site

www.graupner.de



Symbols explication

Always follow the information marked with the CAUTION or WARNING symbol. The signal word WARNING indicates the potential for serious injury, the signal word CAUTION indicates potential minor injuries.

The NOTE indicates important information that should alert you to potential property damage.

Safety notes



WARNING

- These safety instructions are intended not only to protect the product, but also for your own and other people's safety. Therefore please read this section very carefully before using the product!
- Do not leave the packaging material lying around, this could be a dangerous toy for children.
- Persons, including children, with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, or not capable to use safely the Race Copter, must not use it without supervision or instruction by a responsible person.
- The operation of radio controlled models must be learned! If you have never driven such a model, then start extra carefully and make sure to be familiar with the reactions of the model to the remote control commands. Proceed responsibly.
- Always carry on a first range test and function test on the ground (hold the model tightly) before your model is used. Repeat the test with the motor running and with short bursts of throttle.
- Before you select the remote control mode, you have to check the further relevant laws and regulations. These laws you must obey in every case. Pay attention to the possibly different laws of the countries.
- The insurance is mandatory for all kinds of model operation. If you already have one check out whether the operation of the model is covered. If applicable, extend it to special model liability insurance. We recommend to provide the copter with a label, where are indicated the name, address, tel. n., E-mail and Insurance n. So that the copter can be clearly assigned in the event of a crash
- For safety and (CE) certification the unauthorized conversion and / or modification of the product is not permitted.
- They may only be used our recommended components and accessories. Use only genuine matching Graupner connectors of the same design and the same material.
- Make sure that all connections are secure. Do not pull on the cables when you unplug the connector.

- › Protect the Race Copter from dust, dirt, moisture and other foreign parts. Do not expose this equipment to vibration and excessive heat or cold. The remote control operation may be carried out only in “normal” ambient temperatures, in a range from -10 ° C to +55 ° C.
- › Use all of your Hott components only with the latest Software version
- › If any questions arise that can not be ascertained with the help of the operating manual, please contact us (contact information, see page 3) or another expert.



WARNING

- › Pay attention, even while programming, that the connected motors do not start suddenly. Injury risk by the turning propellers! Program always the motors stop switch on the transmitter. (See transmitter manual)
- › Avoid shock and pressure. Check the Race Copter regularly for damages to the housings and cables. Damaged or wet electronic components, even if re-dried, should no longer be used!
- › Never touch the turning propellers, this can cause serious injury.
- › The propellers must be mounted securely, thrown parts can cause serious injury.
- › Keep long hair, loose clothing such as scarves, loose shirts or similar well away from the danger zone of the revolving propeller, they may be withdrawn by the propeller, flying debris can cause serious injury.
- › Follow the safety notes of the required additional components.



Notes:

- › After you perceive your model, check if all components are inside the package and eventual damages.
- › Remove the battery from the model when transporting or when not in use.
- › During transport protect the model and the transmitter from damages.



Care:

Clean the Copter only with the suitable cleaners. Good is a spirit-free cloth. Never use chemical cleaners, solvents, petrol, alcohol or similar.

Preparation for start

To start flying you need the following items:

- › Transmitter (MX-12 / MZ-12 or higher)
- › Battery pack **Graupner** 9717.3.D35 or similar

Battery installation

Fix the battery in its compartment using some hook-and-loop tape. Place the battery so that the copter's centre of gravity is in the middle of the frame.

Binding the receiver with the transmitter

Read the transmitter and receiver manual before you try to bind them.

Receiver's binding

The binding is only possible if the receiver has not yet been binded to another transmitter (red LED blinks). Pushing the SET button the receiver will be set in Bind mode.

If you want to bind an already binded receiver to another memory, follow the next steps:

- › Turn off the RF module in the "Basic setting" menu (see transmitter's manual)
- › Switch on the receiver pushing the SET button to bring it in bind mode
- › Start the binding in the "Basic setting" menu
- › If within 10 seconds the red light turns off and the green LED will light, the binding process was successful. Your RC system is now ready for use.
- › If the red LED is still on it means that the binding process didn't work properly. In this case repeat the procedure.

Transmitter settings

In the transmitter it must be selected a free model memory, the model type must be "surface model" and the channel 1 direction must be set to channel 1 in "motor off" position in the power indicator must show -100%.

The flight mode must be set on channel 5. Then program a two-way switch for channel 5 to control the flight mode:

Attitude mode: Channel 5 = -100% to 0%. The stick movement determinates the Copter reaction on Roll and Nick. It allows a maximal angle of about 50° at 100% of stick movement. Mode suggested for beginners. The stick movements acts directly proportionally to Roll and Nick.

Rate mode: Channel 5 = 0% to +100%. The stick movement determinates the rate without angle limit. Aerobatic mode that allows Rolls and Loopings.

We suggest to set the fail-safe on channel 5 at -100% , so that in fail safe it is active the attitude mode.

Setting the flight mode - Attitude or Rate mode

Do not forget to set the Fail-safe!

Gyro initializing in the receiver

After switching on the Copter, the gyro is already active but not yet initialized. To initialize it, hold the Copter still after switching on. The calibration will be done only when the receiver is completely still.

After 3 seconds in still position you will hear beeps emitted by all motors. The signal tone can vary depending on the esc model. The beeps will stop when the calibration and initialization is complete. Wait until the initialization is complete before you start the model! The motors will not start until the calibration is complete.

First use

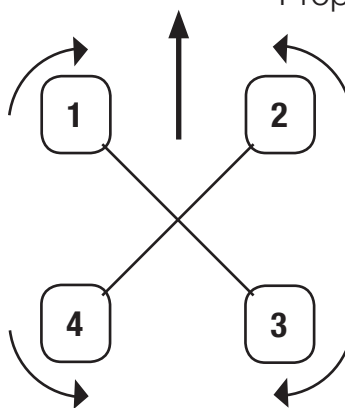
The receiver is optimally set for Race Copter Alpha 250Q. If you want to change however some settings, follows the instructions content in the receiver manual. (Download at www.graupner.de)

Select the flight mode as previously mentioned by the transmitter. This procedure is described in the receiver manual in the section "Transmitter settings".

Install the propellers as shown in the picture below. Pay attention to install the proper propeller to each motor. The propeller rotation sense is written on the propeller (R/L). Picture shows copter from top view.

1 = Motor clockwise
Propeller (.L)

2 = Motor counter-clockwise
Propeller (.R)



4 = Motor counter-clockwise
Propeller (.R)

3 = Motor clockwise
Propeller(.L)

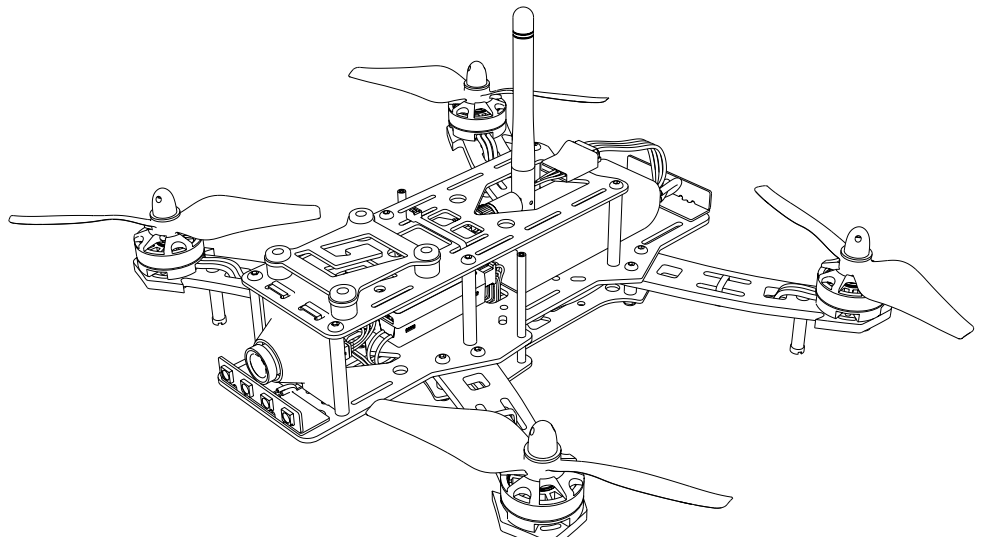
Choose a wide area for your first flight. We suggest to select first the flight mode, because the Copter is thus easier to control and to become familiar with the flight characteristics of Copter. Proceed carefully and responsibly.

So you can make your Copter an FPV
Race Copter!

Suggested accessories

- 9717.3.D35 LiPo battery V-MAXX 50C 3/1500 11,1V XT60
- 48331 Pilot HD Cam
- 16520.40 ALPHA 250 MINI CAMERA
- 48326 5,8 GHz 25mW AV transmitter
- S1002 mz-12 or 33112 MX-12
- 48325 Fatshark AttitudeV2 CE Kit goggles
- 48323 Fatshark Dominator HD Headset goggles

Design example with camera and transmitter



Technical Data

S7047/S7048 ULTRA 2804 2300KV Brushless Motor (clockwise and counter-clockwise)

- › Turns/Volt - 2300KV
- › Diameter - 28mm
- › Input voltage - 2-4S LiPo
- › Shaft diameter - 5mm (clockwise and counter-clockwise)

S3055 Ultra Control 12A speed controller

- › Input voltage - 2-4S LiPo
- › Dimensions mm - 25x20x7
- › Weight - 9 Gramm
- › Maximal current - 12A
- › BEC output - 1A/5V

33579 GR-18 receiver

- › Operating temperature: - 15...+70 °C
- › Antennas: 2 x wires 145 mm
- › Total weight approx.: 14 g
- › Frequency: 2400 ... 2483.5 MHz
- › Range approx.: 4000 m
- › Dimensions ca.: 46 x 21 x 14 mm
- › Modulation: 2.4 GHz FHSS
- › Current consumption: 70 mA
- › Operating voltage: (2,5) 3,6 ... 8,4 V

1347.5x3 / 1348.5x3 Propellers

- › Ø/pitch: 13/7,5 cm
- › Weight approx.: 4,0 g
- › Ø/pitch: 5/3 "
- › Colour: Rot or white

Frame dimensions

- › Axles distance: 22x28 cm
- › Frame height: 7 cm
- › Motors height: 6 cm
- › Frame: 5.6 x 22.5 x 5.5 cm
(thickness 2 mm)
- › Arms 10x3 cm (thickness 3 mm)
- › Weight: 129 g

Conformity declaration



S3055 Ultra Control 12A Speed controller

Graupner/SJ declares that the product is conform to EU norms.

EMV 2004/108/EC: EN 61000-6-1; EN 61000-6-3

33579 GR-18 receiver

Graupner/SJ declares that the product is conform to EU norms.

EN 301 489-1 V1.9.2 EN 301 489-17 V2.1.1

EN 300 328 V1.8.1

EN 60950-1:2006+A11: 2009+A1:2010+A12: 2011

Spare parts

2x	S4047	ULTRA 2804 2300KV Brushless Motor, right
2x	S4048	ULTRA 2804 2300KV Brushless Motor, left
2x	1347.5x3	Propeller white
2x	1348.5x3	Propeller red
4x	S3055	Ultra Control 12A
1x	33579	GR-18 receiver
1x	16520.1	Action Cam holder plate
1x	16520.2	Upper cover plate
1x	16520.3	Main chassis plate
1x	16520.4	Lower cover plate
4x	16520.5	Copter arm
1x	16520.6	Camera holder plate
4x	16520.7	Aluminium spacer 20 mm
6x	16520.8	Aluminium spacer 35 mm
8x	16520.9	Aluminium spacer 5 mm
5x	16520.10	Round-head hex M3x8 screw
29x	16520.11	Round-head hex M3x6 screw
9x	16520.12	Round-head hex M3x16 screw
17x	16520.13	Hex M3x5,5 screw
5x	16520.14	Rubber shock-absorber
9x	16520.15	Locking nut M3
5x	16520.16	Nylon screw M3x6
1x	16520.21	LED light panel, red
1x	16520.22	LED light panel, white

More interesting, current accessories, such as FPV goggles, transmitter, cameras, propellers, batteries, motors and speed controllers for your Race Copter see Accessories for the respective items on our website in the online shop: **www.graupner.de**



Notes on environmental protection

DISPOSAL NOTES

This symbol on the product, user manual or packaging indicates that this product must not be disposed of with other household waste at the end of its life. It must be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

The materials are recyclable as marked. By recycling, material reusing or other forms of scrap usage you are making an important contribution to environmental protection.

Batteries and accumulators must be removed from the device and disposed of at an appropriate collection point. Please inquire if necessary from the local authority for the appropriate disposal site.

Warranty

The Graupner / SJ GmbH, Henriettenstrasse 96, 73230 Kirchheim / Teck grants from the date of purchase of this product for a period of 24 months. The warranty applies only to the material or operational defects already existing when you purchased the item. Damage due to wear, overloading, incorrect accessories or improper handling are excluded from the guarantee. The legal rights and claims are not affected by this guarantee. Please check exactly defects before a claim or send the product, because we have to ask you to pay shipping costs if the item is free from defects.

The present construction or user manual is for informational purposes only and may be changed without prior notice. The current version can be found on the Internet at www.graupner.de on the relevant product page. In addition, the company Graupner/SJ GmbH has no responsibility or liability for any errors or inaccuracies that may appear in construction or operation manuals.

No liability can be accepted for printing errors.